

WHAT IS CLAIMED IS:

1. A printing method of printing by discharging ink from a printhead onto a printing medium on the basis of a dot layout pattern corresponding to a gradation level 5 of each pixel, comprising:

a selection step of selecting one printing operation mode from a first printing operation mode in which one dot layout pattern is assigned to a plurality of pixels at a same gradation level and printing is 10 done on the basis of the assigned dot layout pattern, and a second printing operation mode in which plural types of dot layout patterns are assigned to a plurality of pixels at a same gradation level and printing is done on the basis of the assigned dot 15 layout patterns; and

a printing step of executing the printing operation mode selected in said selection step.

2. A printing method of printing by discharging ink 20 from a printhead onto a printing medium, comprising:

a determination step of determining a dot layout pattern to be assigned to each pixel in accordance with at least one information out of information on a size of the printing medium and information on a size of 25 image data; and

a printing step of printing each pixel on the basis of the determined dot layout pattern,

wherein said determination step determines whether to assign one dot layout pattern or plural types of dot layout patterns to a plurality of pixels at a predetermined level in which a predetermined 5 number of dots are printed in accordance with said at least one information.

3. The method according to claim 2, wherein said one dot layout pattern assigned to the 10 pixels at the predetermined level includes a pattern for printing one or more dots at the same position within the pixel, and the plural types of dot layout patterns assigned to the pixels at the predetermined level include a 15 pattern for printing dots at different positions within the pixel.

4. The method according to claim 2, wherein the plural types of dot layout patterns assigned to the 20 pixels at the predetermined level include a pattern for printing dots at different positions within the pixel, and a pattern for printing dots at the same position within the pixel.

25 5. A printing apparatus which prints by discharging ink from a printhead onto a printing medium on the basis of a dot layout pattern corresponding to a

gradation level of each pixel, comprising:

- first printing means for executing a first printing operation mode in which one dot layout pattern is assigned to a plurality of pixels at a same 5 gradation level and printing is done on the basis of the assigned dot layout pattern; and
- second printing means for executing a second printing operation mode in which plural types of dot layout patterns are assigned to a plurality of pixels 10 at the same gradation level and printing is done on the basis of the assigned dot layout patterns.

6. A printing apparatus which prints by discharging ink from a printhead onto a printing medium on the 15 basis of a dot layout pattern corresponding to a gradation level of each pixel, comprising:

- first printing means for executing a first printing operation mode in which one dot layout pattern is assigned to a pixel corresponding to a predetermined 20 gradation level out of a plurality of gradation levels and printing is done on the basis of the assigned dot layout pattern; and

- second printing means for executing a second printing operation mode in which plural types of dot layout patterns are assigned to a pixel corresponding 25 to the predetermined gradation level and printing is done on the basis of the assigned dot layout patterns.

7. A printing apparatus which prints by discharging ink from a printhead onto a printing medium, comprising:

- 5 first printing means for executing a first printing operation mode in which a dot layout pattern for printing dots at the same position within a pixel is assigned to a pixel corresponding to a predetermined gradation level out of a plurality of gradation levels
10 and printing is done on the basis of the assigned dot layout pattern; and

- second printing means for executing a second printing operation mode in which plural types of dot layout patterns including a dot layout pattern for
15 printing dots at different positions within the pixel are assigned to a pixel corresponding to the predetermined gradation level and printing is done on the basis of the assigned dot layout patterns.

- 20 8. A printing apparatus which prints by discharging ink from a printhead onto a printing medium, comprising:

- determination means for determining a dot layout pattern to be assigned to each pixel in accordance with
25 at least one information out of information on a size of the printing medium and information on a size of image data; and

printing means for printing each pixel on the basis of the dot layout pattern determined by said determination means,

wherein said determination means determines, in
5 accordance with said at least one information, whether to assign one dot layout pattern or plural types of dot layout patterns to a plurality of pixels at a predetermined level in which a predetermined number of dots are printed.

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9. The apparatus according to claim 8, further comprising:

scanning means for reciprocally scanning the printhead in a first direction; and

15 conveyance means for conveying the printing medium in a second direction different from the first direction,

wherein the size of the printing medium includes any one of a size in the first direction, a size in the
20 second direction, and a sum of the sizes in the first and second directions, and

the size of the image data includes any one of a size in the first direction, a size in the second direction, and a sum of the sizes in the first and
25 second directions.

10. The apparatus according to claim 9, wherein said

printing means includes multi-pass printing control means for controlling so as to scan a region printable by one scanning using all printing elements of the printhead by the printhead a plurality of number of 5 times, thereby completing printing in the region.

11. The apparatus according to claim 9, wherein said one dot layout pattern assigned to the pixels at the predetermined level includes a pattern 10 for printing dots at the same position within the pixel, and

the plural types of dot layout patterns assigned to the pixels at the predetermined level include a pattern for printing dots at different positions within 15 the pixel.

12. The apparatus according to claim 11, wherein the plural types of dot layout patterns assigned to the pixels at the predetermined level include a pattern for 20 printing dots at different positions within the pixel, and a pattern for printing dots at the same position within the pixel.

13. The apparatus according to claim 11, wherein in 25 printing the pattern for printing dots at different positions within the pixel, dots are printed at the different positions by changing a dot position in the

first direction in which the printhead is scanned by said scanning means.

14. The apparatus according to claim 11, wherein in
5 printing the pattern for printing dots at different positions within the pixel, ink droplets are printed at the different positions by changing a dot position in the second direction in which the printing medium is conveyed by said conveyance means.

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